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Visitor's Guide to the Local Collection of Birds in the Museum of Natural History, New York City. By FRANK M. CHAPMAN. 1894. 8°, pp. 100. 15 cents.

One of the best and most attractive local bird lists that has ever appeared in America has been recently issued from the American Museum of Natural History, New York. While it bears the misleading title *Visitor's Guide*, only a glance is necessary to see that it is much more. It is in reality a compact treatise on the birds known to occur within 50 miles of the great metropolis.

The author, Mr. Frank M. Chapman, prefacing the list proper by 12 pages of interesting and important matter respecting the physical and faunal aspects of the region, and the birds that are found there at different seasons. The area covered by the list is unusually rich in birds, no less than 348 species being recorded as occurring within its limits. This richness, as stated by Mr. Chapman, is due in part to the circumstance that two faunas—the *Alleghanian* (or eastern division of the Transition Zone) and *Carolinian* (or eastern division of the Upper Austral Zone) meet within its boundaries, and in part to the natural advantages of the region. "Our sea-coast, with its sandy beaches and shallow bays; our rivers, creeks and ponds, with their surrounding grassy marshes; our wooded hillsides and valleys; our rolling uplands and fertile meadows, offer haunts suited to the wants of most birds. Again, our coast-line and the Hudson River Valley form natural highways of migration regularly followed by birds in their journeys to and from their summer homes."

The paper is a model of its kind and should be in the hands of all interested in the birds of New York and vicinity. It is bountifully illustrated by cuts of birds borrowed from Coues' *Key*, to which are added several full-page plates of groups in the American Museum.

C. HART MERRIAM.

Outline of Dairy Bacteriology. By H. L. RUSSELL, University of Wisconsin. Published in Madison, Wisconsin, 1894. Pp. vi+186.

There is no better indication of the rather remarkable advance that has been made in recent years in bacteriological matters not connected with diseases than the publication of a text-book upon dairy bacteriology. That there should be demanded for classes in dairy schools a text-book describing the various phenomena connected with bacteria in their relation to dairy matters is rather surprising when we consider the fact that dairy bacteriology itself is the result of experiments of the last very few years. Prof. Russell has attempted in this little book of about 180 pages to give an outline of the present knowledge of the relation of bacteria to milk and all its products. The book is designed originally for his classes in a dairy school, and is, as its title indicates, only an outline, not involving any critical scientific discussions. As an outline, however, it is quite complete and the treatment is satisfactory. The book will be of use not only in dairy schools, but to all who are interested in matters connected with milk or butter supply. It will also be found useful to nurses and physicians who desire a knowledge of some of the recent discussions in connection with milk bacteriology and its relations to diseases.

H. W. C.

The nature and distribution of attraction-spheres and centrosomes in vegetable cells.—JOHN H. SCHAFFNER. Bot. Gaz. Nov. 1894.

The author studied centrosomes found in root tips of *Allium cepa* L., *Vicia faba* L., *Tradescantia rosea* L., also in the resting cells of the epidermis of *Allium cepa* bulb scales and in the walls of *Lilium longiflorum* ovaries. The usual methods for preparing and staining the material were adopted. In addition the author used a stain suggested by

Prof. Newcombe. It is called the iron-tannin-safranin stain and consists of the following solutions : 1, 1% aq. sol. of ferrous sulphate; 2, 5% aq. sol. of tannic acid; 3, alcoholic solutions of anilin-safranin; 4, aq. sol. of picro-nigrosin. The sections are placed for thirty to forty minutes in the iron solution, washed, then placed for the same period in the tannic acid solution; again washed and replaced for a few minutes in the iron sol. After washing again they are placed in the safranin for thirty minutes; then fifteen minutes in the picro-nigrosin. This method is said to give good results.

The special results of the investigations may be summarized as follows: (1.) Centrosomes and attraction spheres are present in non-reproductive as well as in reproductive vegetable cells. (2.) In phanerogams there are two of these bodies for each resting nucleus. (3.) When the nucleus prepares to divide, one or both of the centrosomes migrate to take their position at the poles of the future spindle. (4.) Subsequently they immediately begin to divide. The division is complete in the prophase of the mother nucleus. (5.) After their migration the spheres remain at the poles of the nuclear spindle and do not change their position until the beginning of the following division. (6.) Centrosomes are persistent.

One plate and a list of thirty-three valuable references accompany the article.

ALBERT SCHNEIDER.

NOTES AND NEWS.

THE ELIHU THOMSON PRIZE.

THE Elihu Thomson prize of 5,000 francs has been awarded to Dr. Arthur G. Webster, of Clark University, Worcester, Massachusetts: The history of this prize is, briefly, as follows :—

In 1889 the City of Paris offered a series of prizes for the best 'electric meters,' it being required that certain conditions should

be satisfied, to be determined by an exacting practical test. The first prize, 5,000 francs, was awarded to Professor Elihu Thomson, who submitted the well known Watt-meter devised by him. Wishing to encourage investigation of certain theoretical questions Professor Thomson donated the prize for the establishment of a new competition, the subjects to be considered and the prize to be determined by a committee which consisted of J. Carpentier, Hippolyte Fontaine, Hospitalier, Mascart, A. Potier and Abdank-Abakanowicz. Four subjects for investigation and discussion were selected, and it was announced that competing memoirs must be submitted on or before September 15, 1893. Four memoirs were submitted to the committee; one of these was written in German, one in French and two in English. The two latter, numbered respectively three and four, related to the same subject, namely, the determination of the period of electric oscillations. On examining the memoirs the committee reported that it 'considered memoir number four to be worthy to receive the prize established by Professor Elihu Thomson,' and expressed the hope that the author will be encouraged to continue his beautiful researches.

At the same time they express their regret that they have not available another prize of the same value which they would be glad to award to memoir number three. When their desire in this respect was made known, Professor Thomson and the French and English Thomson-Houston Electric Companies joined in offering another 5,000 francs, which was awarded to the author of memoir number three. On opening the sealed envelopes containing the authors' names, it was found that memoir number four, for which the first prize had been awarded, was prepared by Dr. Webster, and number three was the joint product of Oliver Lodge and Glazebrook.